

**REMARKS**

This Application has been carefully reviewed in light of the Office Action mailed April 6, 2005. To clarify various aspects of inventive subject matter Applicants amend Claims 10, 13, 26, and 27. Applicants also introduce new Claims 44-45. To advance prosecution of this application, Applicants have responded to each notation by the Examiner. Applicants submit that all of the pending claims are in allowable over the cited references. Applicants respectfully request reconsideration, further examination, and favorable action in this case.

**Subject Matter Indicated as Allowable**

Applicants note with appreciation the Examiner's statement that Claims 1-2, 4-9, 11-12, 25, 27-28, 30-33, 39, and 41-42 are allowed.

**Claim Rejection 35 U.S.C. § 112**

The Examiner rejects Claims 10, 13, 26, 27, and 43 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have rewritten Claims 10, 13, 26, and 27. Applicants believe these amendments do not narrow the scope of the claims, but address the Examiner's rejections under §112. Applicants respectfully request reconsideration and favorable action in this case.

**Claim Rejection 35 U.S.C. § 103**

The Examiner rejects Claims 26 and 43 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,449,407 by Kiang et al ("*Kiang*") and further in view of U.S. Patent 6,091,867 by Young et al. ("*Young*"). Applicants respectfully traverse these claim rejections for the reasons discussed below.

Applicants respectfully submit that the Examiner's proposed *Kiang-Young* combination fails to support the obviousness rejections for at least three reasons. First, the proposed *Kiang-Young* combination fails to disclose, teach, or suggest each and every limitation specifically recited in the rejected claims. Second, even if *Kiang* and *Young* could properly be construed as disclosing each and every limitation, which Applicants dispute, the

required teaching, suggestion, or motivation to combine at least *Kiang* with *Young* would still be lacking. Third, even if *Kiang* and *Young* could properly be construed as disclosing each and every limitation and also could properly be combined, both of which Applicants dispute, *Young* is not analogous art and thus may not properly be used to reject Applicants' claims.

a. **Claim 26 is patentable over *Kiang* in view of *Young***

To defeat a patent under 35 U.S.C. § 103, "the prior art reference must teach, disclose, or suggest all the claim limitations." *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991); M.P.E.P. § 706.02(j). Applicants respectfully submit that the references cited by the Examiner, taken alone or in combination, fail to teach or suggest, either expressly or inherently, a number of elements of amended independent Claim 26.

Among other features, amended Claim 26 recites, in part, "an array of optical add/drop multiplexers coupled to the demultiplexer, at least one of the add/drop multiplexers comprising a micro-electro-optic system (MEMS) device." Amended Claim 26 also recites, in part, that the MEMS device comprises "a moveable mirror operable to change its position, the position of the moveable mirror affecting whether one or more of the input wavelengths are passed through or dropped from the array." In addition, amended Claim 23 recites, in part, that the MEMS device comprises "an inner conductive layer disposed inwardly from the moveable mirror and forming a space between the moveable mirror and the inner conductive layer, wherein the moveable mirror comprises an at least substantially conductive layer operable to move relative to the inner conductive layer in response to a voltage difference between the moveable mirror and the inner conductive layer."

Applicants submit that amended Claim 26 is patentable over *Kiang* in view of *Young*. For example, as conceded by the Examiner, nowhere does *Kiang* contemplate a MEMS device that comprises "an inner conductive layer disposed inwardly from the moveable mirror and forming a space between the moveable mirror and the inner conductive layer, wherein the moveable mirror comprises an at least substantially conductive layer operable to move relative to the inner conductive layer in response to a voltage difference between the moveable mirror and the inner conductive layer." See e.g., *Office Action at 4*. Consequently, *Kiang* fails to teach or suggest amended Claim 26.

The teachings of *Young* do not make up for the deficiencies of *Kiang*. At the outset, Applicants note that nowhere does *Young* disclose or suggest implementing a MEMS device within *Young's* optical switching system. Moreover, nowhere does *Young* contemplate a MEMS device having a space between a moveable mirror and an inner conductive layer, where the moveable mirror comprises an at least substantially conductive layer that is operable to move relative to the inner conductive layer in response to a voltage difference between the moveable mirror and the inner conductive layer. The portions of *Young* cited by the Examiner (e.g., Figures 3-6; Col. 5, Lines 22-43) relate to an embodiment that controllably deflects or transmits an incident light beam without moving the deflection element 70. In particular, the introduction to this portion of *Young* states:

As a further alternative, rather than employ a physically displaceable light deflector element (such as a linearly translatable or rotatable mirror, as diagrammatically shown in FIG. 2, described above), a respective controlled optical deflection element may comprise a functionally equivalent light control element, that is installed in the light beam path, and is operative to controllably deflect or pass an incident light beam, but does so without being physically displaced. As a non-limiting example, such a controlled light beam deflector element may comprise a controlled medium-containing element, an individual one of which is diagrammatically illustrated at 70 in FIGS. 3 and 4.

*Col. 5, Lines 10-21 (emphasis added)*. Thus, the optical deflection element 70 of Figures 3-6 operates to deflect or transmit an incident light beam without moving deflection element 70. As described in *Young*, the optical deflection element 70 is capable of selectively deflecting or transmitting an incident light beam without movement because element 70 includes a material having reflective and transmissive properties that vary in response to an external stimulus (e.g., liquid crystal). *See Col. 5, Lines 22-61*. Consequently, the portions of *Young* cited by the Examiner fail to teach or suggest a MEMS device that comprises “an inner conductive layer disposed inwardly from the moveable mirror and forming a space between the moveable mirror and the inner conductive layer, wherein the moveable mirror comprises an at least substantially conductive layer operable to move relative to the inner conductive layer in response to a voltage difference between the moveable mirror and the inner conductive layer.” Indeed, the portions of *Young* cited by the Examiner teach away from a mirror moving relative to an inner conductive layer by requiring element 70 to deflect or transmit the incident light beam without movement.

The portions of *Young* that discuss moving mirrors describe a mirror 40 that can be moved when contacted by a moving actuator 44. *See e.g., Col. 4, Line 34 - Col. 5, Line 9; Figure 2.* *Young* does not contemplate movement of mirror 40 in response to a voltage difference between mirror 40 and actuator 44. Thus, *Young* fails to teach or suggest at least a MEMS device that includes “an inner conductive layer disposed inwardly from the moveable mirror and forming a space between the moveable mirror and the inner conductive layer, wherein the moveable mirror comprises an at least substantially conductive layer operable to move relative to the inner conductive layer in response to a voltage difference between the moveable mirror and the inner conductive layer.”

For at least these reasons, Applicants submit that *Kiang* and *Young*, taken alone or in combination, fail to teach or suggest amended Claim 26. Applicants respectfully request withdrawal of the rejection and full allowance of amended independent Claim 26 and all claims depending therefrom.

**b. No suggestion or motivation to combine**

Even assuming for the sake of argument that *Kiang* and *Young* could be considered to disclose each and every limitation of Applicants' claims, which Applicants dispute, these rejections are improper because the Examiner has not shown the required teaching, suggestion, or motivation in *Kiang*, *Young*, or knowledge generally available to those of ordinary skill in the art at the time of the invention to combine *Kiang* with *Young* in the manner the Examiner proposes. The rejected claims are also allowable for at least this reason.

The M.P.E.P. sets forth a strict legal standard for finding obviousness based on a combination of references. According to the M.P.E.P., “Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge [that was] generally available to one of ordinary skill in the art” at the time of the invention. M.P.E.P. 2143.01. The “fact that references can be combined or modified does not render the resultant combination [or modification] obvious unless the prior art also suggests the desirability of the combination” or modification. *Id.* (emphasis in original).

The governing Federal Circuit case law makes this strict legal standard even more clear.<sup>1</sup> According to the Federal Circuit, “a showing of a suggestion, teaching, or motivation to combine . . . prior art references is an essential component of an obviousness holding.” *In re Sang-Su Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000)). “Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved.” *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). However, the “range of sources available . . . does not diminish the requirement for actual evidence.” *Id.* In *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board of Patent Appeals and Interferences, explaining that proper evidence of a teaching, suggestion, or motivation to combine is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999 (quoting *W.L. Gore & Assoc., Inv. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)) (emphasis added) (citations omitted).<sup>2</sup>

In the present case, the Examiner is improperly using the Applicants' disclosure as a blueprint for piecing together various elements of *Kiang* and *Young*. As provided above, the mere fact that references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). Thus, the mere fact that the teachings of one reference would improve the teachings of another reference as asserted by the Examiner does not provide the required suggestion to combine. The showing must be clear and particular. *See, e.g., C.R. Bard v. M3*

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<sup>1</sup> Note M.P.E.P. 2145 X.C. (“The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.”).

<sup>2</sup> *See also In Re Jones*, 958 F.2d 347, 351 (Fed. Cir. 1992) (“Conspicuously missing from this record is any evidence, other than the PTO's speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at” the claimed invention.).

*Sys., Inc.*, 48 U.S.P.Q.2d 1225, 1232 (Fed. Cir. 1998). Without such independent suggestion, the art is to be considered as merely inviting unguided and speculative experimentation which is not the standard with which obviousness is determined. *Agmen Inc. v. Chugai Pharmaceutical Co., Ltd.*, 927 F.2d 1200 (Fed. Cir. 1991).

To reject Claim 23 under the proposed combination of *Kiang-Young*, the Examiner has made conclusory “it would have been obvious” and “[a]n ordinary artisan would have been motivated” statements. For example, the Examiner has merely stated that “it would have been obvious” to make the proposed combination “for the advantage of allowing the deflection or passing an incident light beam rapidly.” *See e.g., Office Action at 4-5*. The Examiner has presented no evidence, however, that suggests or motivates the combination. It is improper for the Examiner to use hindsight having read the Applicants’ disclosure to arrive at an obviousness rejection. *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988).

Consequently, a *prima facie* case of obviousness cannot be maintained with respect to Claim 26, as the Examiner has not show the requisite proof necessary to establish a suggestion or motivation to combine the cited references.

**c. Young is non-analogous art**

Even assuming for the sake of argument that *Kiang* and *Young* could be considered to disclose each and every limitation of Applicants’ claims, which Applicants dispute, and even if it would have been possible to in some way combine the teachings of *Kiang* and *Young*, which Applicants also dispute, these rejections would still be improper because *Young* is not analogous art. The Examiner must determine, with respect to the subject matter at issue, what is analogous art for purposes of the obviousness analysis. M.P.E.P. § 2141.01(a). “In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” *In re Oetiker*, 977 F.2d 1443, 1446, 24 U.S.P.Q.2d 1443, 1445 (Fed. Cir. 1992). A reference in a different field may be reasonably pertinent only if “it is one which because of the matter with which it deals, logically would have commended itself to an inventor’s attention when considering his problem.” *In re Clay*, 966 F.2d 656, 659, 23 U.S.P.Q.2d 1058, 1061 (Fed. Cir. 1992). Since *Young* fails to mention or even remotely allude to a MEMS device that includes “an inner

conductive layer disposed inwardly from the moveable mirror and forming a space between the moveable mirror and the inner conductive layer, wherein the moveable mirror comprises an at least substantially conductive layer operable to move relative to the inner conductive layer in response to a voltage difference between the moveable mirror and the inner conductive layer,” *Young* is not in Applicants’ field of endeavor and certainly would not have “commended itself” to Applicants when considering the problem addressed by Applicants’ invention. Thus, *Young* can not properly be used as a reference against Applicants’ claims and these rejections cannot properly be maintained.

For at least these reasons, Applicants submit that *Kiang* and *Young*, taken alone or in combination, fail to teach or suggest amended Claim 26. Applicants respectfully request withdrawal of the rejection and full allowance of amended independent Claim 26 and all claims depending therefrom.

**No Waiver**

All of Applicants’ arguments and amendments are without prejudice or disclaimer. Additionally, Applicants have merely discussed example distinctions from the *Kiang* and *Young* references. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner’s additional statements. The example distinctions discussed by Applicants are sufficient to overcome the anticipation and obviousness rejections.

**CONCLUSION**

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons and for other reasons clearly apparent, Applicants respectfully request reconsideration and full allowance of all pending Claims.

Applicants believe that no fees are due. However, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

If the Examiner feels that a conference would advance prosecution of this Application in any manner, Douglas M. Kubehl stands willing to conduct such a telephone interview at the convenience of the Examiner. Mr. Kubehl may be reached at 214-953-6486.

Respectfully submitted,

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